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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,882	09/11/2003	Joshua A. Conway	PD-01-518	5000
22462	7590	10/19/2004	EXAMINER	
GATES & COOPER LLP HOWARD HUGHES CENTER 6701 CENTER DRIVE WEST, SUITE 1050 LOS ANGELES, CA 90045			RAHLL, JERRY T	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,882

Applicant(s)

CONWAY ET AL.

Examiner

Jerry T Rahll

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-10,12 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 1, 3, 9-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 9 is objected to because of the following informalities: the beginning of the claim does not make sense as written. For examination purposes, Claim 9 will be considered to describe, "The apparatus of Claim 8, wherein the signal is an inter-satellite..." Appropriate correction is required.

3. Claims 10-18 are objected to because of the following informalities: While all of the limitations of Claim 10 are present and relate to each other correctly, the claim language is confusing. The claim refers to, "...coupling the first optical fiber and the second optical fiber between the first end and *first reflective end* of the first optical fiber and the second output end and *second reflective end* of the second optical fiber with an optical coupler..." While the limitations become clear in view of the references of reflective ends later in the claim, the examiner requests that claim 10 be re-written to clear up this minor antecedent basis problem. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 5-10, 12, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,324,322 to Luo et al.

6. Luo et al. describes an optical interferometer having a first optical fiber with a first end (14), for receiving signal input and providing a first output (see Column 5, Lines 59-61), and a reflective end (41), a second optical fiber having a second output end (15) and a second reflective end (41), and an optical coupler (11) for coupling the first and second fibers between the ends of each fiber, where the fibers provide paths from the coupler to the reflective ends and back to the coupler where the second path is greater than the first path by a delay length (see Columns 4-6).

7. Luo et al. does not specifically describe the first and second path as each less than the lengths describes in Claims 1, 3, 10 and 12. Luo et al. is mute on the path lengths. It would have been an obvious matter of design choice to create the interferometer of Luo et al. having any path length shorter than those described in the current application, since such a modification would have involved a mere change in size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

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8. Luo et al. does not specifically describe the coupler s a 50:50 coupler. However, the coupler described by Luo et al. inherently functions as a 50:50 coupler because it evenly divides the signal (see Column 5, Lines 25-29).

9. Luo et al. describes the reflective ends as cleaved and coated with silver or gold (see Column 5, Lines 9-19).

10. Luo et al. does not specifically describe the interferometer as employed in a satellite communication and the input signal as an inter-satellite communication signal. However, the interferometer described by Luo et al. could be used in any MWDM system. The location of the system on a satellite or origin of signals from a satellite does not change the function or use of such device. Therefore, it would have been obvious to one of ordinary skill in the art to use the interferometer of Luo et al. in a satellite communication system with an inter-satellite communication input signal.

Allowable Subject Matter

11. Claims 2, 4, 11, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 2 and 11 describe the received signal input as a DSPK signal. Claims 4 and 11 describe the delay length as corresponding to one bit of the modulated signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T Rahll whose telephone number is (571) 272-2356. The examiner can normally be reached on M-F (8:00-5:30), with alternate Fridays off.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jerry T Rahl



AKM ENAYET ULLAH
PRIMARY EXAMINER